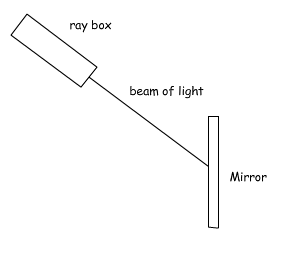
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| --- | --- | --- |
|  | **Reflection of light** | **شعار-القسم** |
| **Worksheet**  **(7)** |

|  |  |
| --- | --- |
| Name: | Class: 8 / ……… |
| Number: | Date: / 05/ 2012 |

**A-Experiment-1**

Watch flash animation then answer following questions

1-Set up the following apparatus:



Ray box

Ray of light

Mirror

1. What happened to the ray of light that strikes the mirror?

It returns backward. The ray of light that strikes the mirror is reflected**.**

1. What is called such phenomenon?

Reflection of light**.**

1. Complete the following figure and label it.

Incident ray

angle of incidence

Normal

angle of reflection

Reflected ray

Mirror

1. Define the following

-Incident ray: The ray that strikes the plane mirror.

-Reflected ray: the backward ray of the plane mirror.

-Normal: The line perpendicular to the mirror.

-Angle of incidence: The angle between the incident ray and the normal.

-Angle of reflection: the angle between the normal and the reflected ray

**B-Experiment 2:**

1- Use the previous apparatus to complete the table bellow**:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Trial | 1 | 2 | 3 | 4 | 5 | 6 |
| Angle of incidence(o) | 15 | 20 | 30 | 35 | 40 | 60 |
| Angle of reflection(o) | 15 | 20 | 30 | 35 | 40 | 60 |

2- Compare for each trial the angle of incidence to the angle of reflection.

angle of incidence = angle of reflection

3- State the laws of reflection

a- The first law of reflection: the angle of incidence equals the angle of reflection.

b- The second law of refraction: The incident ray, the normal and the reflected ray all lie in the same plane.

**C- The types of reflection**

1- What are types of reflection?

a- regular reflection.

b- diffuse reflection**..**

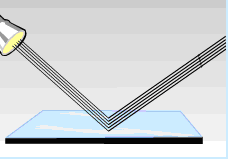
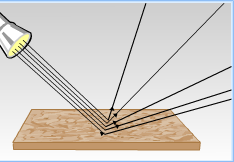
2- When does regular reflection (specular) occur?

It happens when light falls on the surface of a polished object like a mirror or the surface of still water.

3- When does diffuse reflection occur?

It happens when light falls on the surface of a rough object, the reflected rays spread at various angles, so no image is formed**.**

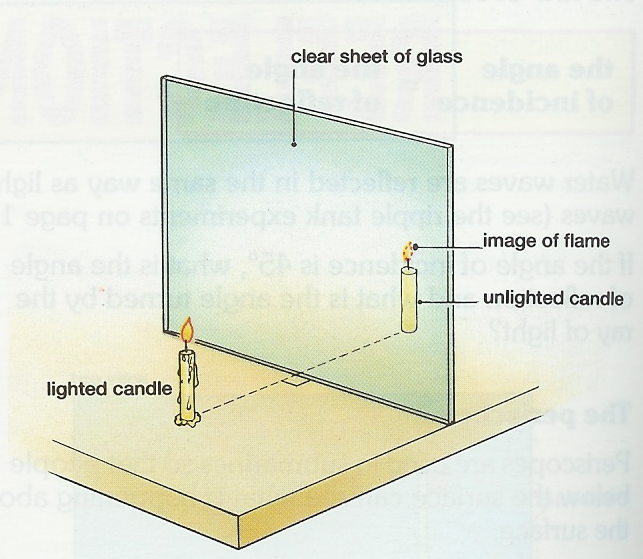
4- Which figure represents regular reflection and diffuse reflection?

Irregular reflection

Regular reflection

**D-Image of an object given by a mirror**

A lighted candle (called the object) is placed on the bench in front of the sheet of clear glass.

Look for carefully of the image of the candle.

1. Where is the position of the image of lighted candle

It lies behind the mirror.

Move an unlighted candle (of the same height) into a position behind the sheet of clear glass so that it appears to be burning.

1. Measure the distance of the image from the sheet of clear glass and thedistance of the lighted candle and from the sheet of clear glass. What do you notice?

They are equal.

1. List five features of the image in the plane mirror.

a- the image is virtual (This virtual image can not be formed on a screen)

b- The image in the plane mirror is laterally inverted.

c- It has the same size of the real object.

d- It appears to be behind the plane mirror

e- It is as far behind the plane mirror as the object is in front.

4-A letter L is near a plane mirror, draw the image of the letter in the correct shape and position**.**

**L**

Plane mirror

**E-** List three applications of the reflection of light:

a- The periscope .

b- We use it in eyes test I n clinic of doctor

c- In the cars